Air Quality Permitting
Statement of Basis

June 14, 2006

Tier II Operating Permit and Permit to Construct No. P-060113

Interstate Concrete and Asphalt Company, Sandpoint

Facility ID No. 017-00048

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FINAL PERMIT

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Acronyms, Units, and Chemical Nomenclature

acfm	actual cubic feet per minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	Environmental Protection Agency
°F	degrees Fahrenheit
gr/dscf	grains (1 lb = 7,000 grains) per dry standard cubic foot
HAPs	Hazardous Air Pollutants
HMA	hot mix asphalt
IDAPA	A numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pound per hour
MACT	Maximum Available Control Technology
MMBtu/hr	million British thermal units per hour
NESHAP	Nation Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
O&M	operation and maintenance manual
PAH	polyaromatic hydrocarbon
PCBs	polychlorinated biphenyls
PM	particulate matter
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTC	permit to construct
RAP	recycled asphalt pavement
Rules	Rules for the Control of Air Pollution in Idaho
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SM	synthetic minor
SO_2	sulfur dioxide
TAPs	toxic air pollutants
TSP	total suspended particulate
T/yr	tons per year
$\mu g/m^3$	micrograms per cubic meter
UTM	Universal Transverse Mercator
VOC	volatile organic compound

1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01 Section 201, Rules for the Control of Air Pollution in Idaho (Rules) for Permits to Construct.

2. FACILITY DESCRIPTION

Interstate Concrete and Asphalt Company (Interstate) operates a hot mix asphalt (HMA) plant, a concrete batch plant, and associated aggregate handling at this facility located at 1000 Baldy Mountain Road in Sandpoint.

3. FACILITY / AREA CLASSIFICATION

This Interstate facility in Sandpoint is defined as a synthetic minor facility because, without permit limits on the potential to emit, the PM_{10}, CO, and NO_X emissions would exceed 100 tons per year each. The Aerometric Information Retrieval System (AIRS) classification is "SM" because the potential to emit of CO and NO_X are limited to less than major source levels by limiting the production of asphalt and concrete from the HMA and concrete batch plants. The potential to emit of PM_{10} is limited to less than major source levels by the use of baghouses.

The facility is located within AQCR 63 and UTM zone 11. The facility is located in Bonner County and in the Sandpoint PM_{10} Nonattainment Area. The Tier II Operating permit issued to this facility is identified as a control measure in the PM_{10} Air Quality Improvement Plan for Sandpoint, dated August 1996. Bonner County is designated attainment for ozone and unclassifiable for all other criteria pollutants (CO, NO_X, SO_2, and lead). The Sandpoint area is designated attainment for $PM_{2.5}$. Outside of the Sandpoint PM_{10} nonattainment boundary, Bonner County is unclassifiable for PM10.

The AIRS information provided in Appendix A defines the classification for each regulated air pollutant at Interstate Concrete and Asphalt Company. This required information is entered into the EPA AIRs database.

4. APPLICATION SCOPE

This modification to the Tier II operating permit and permit to construct affects only the HMA plant, and is limited to the following changes:

1) Replace the 36 MMBtu/hour Barber Greene DA-65 batch mix plant with a 75.6 MMBtu/hr Aesco/Madsen drum mix plant,
2) Permit the use of recycled asphalt pavement (RAP) as part of the design aggregate, and
3) Increase the allowable hourly production of hot mix asphalt from 200 tons per hour to 300 tons per hour. Because this facility is located in the Sandpoint PM_{10} nonattainment area, this PTC also addresses the increase in fugitive emissions from additional truck traffic needed to support the proposed increase in HMA production.

No change is proposed in the annual production, which remains at 140,000 tons of hot mix asphalt per consecutive 12-month period.

4.1 Application Chronology

February 7, 2006	Receipt of PTC application and $1,000 application fee to modify the existing Tier II operating permit (T2-040102). DEQ determined that this application would be processed as a Tier II/PTC combination, and assigned project number T2-060103.
March 1, 2006	PTC application determined to be incomplete.
March 28, 2006	Receipt of 15-Day Pre-Permit Construction Approval application to modify the existing Tier II operating permit (T2-040102). DEQ determined that this application replace the previous submittal in its entirety, that the application would be processed as a Tier II/PTC combination, PTC fees were applicable rather than Tier II fees, applied the previously tendered $1,000 application fee to this project, and assigned project number P-060113.
April 12, 2006	Pre-permit construction approval granted.
April 28, 2006	PTC application determined to be complete.
May 11, 2006	Public notice for an opportunity to comment was published.
May 18, 2006	Receipt of a public comment/question through DEQ's website portal for this opportunity for public comment. Commenter asked about hydrogen sulfide emissions from HMA plants.
June 12, 2006	Opportunity to comment period closed. No requests for a public comment period received.
June 13, 2006	DEQ provided draft permit for Regional Office review and issued PTC processing fee request letter to the facility.
June 13, 2006	Receipt of comments from the Coeur d'Alene Regional Office.
June 14, 2006	Receipt of $1,000 PTC processing fee.

5. PERMIT ANALYSIS

This section of the Statement of Basis describes the regulatory requirements for this PTC.

5.1 Equipment Listing

Drum Dryer:

Manufacturer:	Aesco/Madsen CFM250
Rated heat capacity:	75.6 MMBtu/hr
Production capacity:	300 tons/hr
Allowable Fuels:	natural gas, propane, distillate fuel oil, and used oil

Drum Dryer Baghouse:

Manufacturer:	Aesco Model ASB-420
Configuration:	360 NOMEX bags (15 x 24); each bag is 6 inch diameter x 180 inches long
Performance:	Air to cloth ratio of 5.1 and pressure drop of 3.5 inches water gauge
Stack Parameters:	Height 60 feet (18.3 meters), Exit diameter 3.15 ft (0.96 m), Exit gas volume 42,410 acfm, temperature 280°F, moisture content 4%

5.2 *Emissions Inventory*

This PTC addresses only the change in estimated emissions resulting from the proposed changes described in Section 4. As noted in the March 23, 2006 application, the PM emissions were estimated based on the dryer stack parameters and the manufacturer's guaranteed grain loading of 0.04 grains per dry standard cubic foot (gr/dscf). PM_{10} emissions were estimated as 70% of the PM emissions, based on the ratio of AP-42 factors for PM and PM_{10} for a drum dryer with a baghouse. The estimated emissions for all other criteria pollutants were based on AP-42, Section 11.1 emission factors for a drum mix dryer with a baghouse, using the highest factor for any of the allowable fuels for each pollutant.

AP-42 Section 11.1.1.3 states that a counterflow drum mix plant can normally process recycled asphalt pavement (RAP) at ratios up to 50 percent with little or no observed effect upon emissions. Because of these findings, the permit allows processing of design aggregate that is comprised of up to 50 percent RAP.

The Sandpoint State Implementation Plan (SIP) includes a requirement that the emission inventory and modeling include fugitive emissions of PM_{10} from processes and from traffic on the roads within the facility. Process fugitives of PM_{10} from front loader aggregate handling were estimated based on AP-42 Section 13.2.4, Equation (1), and PM_{10} emissions from product loadout were based on AP-42 Table 11.1-14 emission factors. Emissions from paved and unpaved roads were estimated based on emission factors from AP-42 Section 13.

The change in estimated emissions of particulate matter (PM) and criteria pollutants resulting from this PTC is shown in Table 5.1. The detailed emissions inventory is included in Appendix B.

Table 5.1 PTC CHANGES TO ESTIMATED EMISSIONS FROM HMA PLANT – PM & CRITERIA POLLUTANTS

Pollutant	PM		PM_{10}		NO_x		SO_2		CO		VOC		Pb	
Process(es):	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
HMA Plant:														
Drum Mix Dryer [c]	8.97	2.09	6.28	1.46	16.5	3.85	17.4	4.06	39.0	9.10	9.60	2.24	4.5E-03	1.1E-03
Batch Mix Dryer [b]	5.8[a]	2.0[a]	2.3[a]	0.81[a]	24	8.4	17.6	6.16	80	28	7.2	2.52	2.0E-3	7.0E-4
Increase/Decrease	**3.17**	**0.09**	**3.98**	**0.65**	**-7.5**	**-4.55**	**-0.2**	**-2.1**	**-41**	**-18.9**	**2.4**	**-0.28**	**0.0025**	**0.0004**
Vehicle Fugitive Dust (Paved and Unpaved):														
300 T/hr HMA [c]			0.072	0.0168										
200 T/hr HMA [c]			0.048	0.0112										
Increase/Decrease			**0.024**	**0.0056**										
Process Fugitive Dust:														
300 T/hr HMA [c]														
Front Loader			0.086	6.02										
HMA Loadout			0.036	2.52										
200 T/hr HMA [c]														
Front Loader			0.057	3.99										
HMA Loadout			0.024	1.68										
Front Loader			0.029	2.03										
HMA Loadout			0.012	0.84										
Increase/Decrease			**0.041**	**2.87**										
TOTAL CHANGE	**3.17**	**0.09**	**4.05**	**3.53**	**-7.5**	**-4.55**	**-0.2**	**-2.1**	**-41**	**-18.9**	**2.4**	**-0.28**	**0.0025**	**0.0004**

[a]Emission rates based on permit limits contained in Permit No. T2-040102, dated June 25, 2005.
[b]Emission estimates for HMA batch plant taken from Technical Analysis for Permit No. T2-040102, except as noted.
[c]Emission estimates taken from March 23, 2006 application.

The AP-42 Section 11.1 emission factors for toxic air pollutants (TAPs) are the same for HMA batch mix plants and drum mix plants. Since there is no change proposed to the annual HMA production of 140,000 tons of HMA per year, an analysis of carcinogenic TAPs (which are compared to an annual standard) was not required.

The acceptable ambient concentration (AAC) for non-carcinogenic TAPs, however, is a 24-hour standard given in units of milligrams per cubic meter (mg/m^3). The proposed increase in the daily HMA production therefore requires that the increase in non-carcinogenic TAPs emissions be evaluated.

TAPs emissions estimates in the application include emissions from the drum dryer and from product loadout, but neglect TAPs emissions from silo filling because the gases and particulates from silo filling are captured and rerouted back to the drum dryer. DEQ has no information to confirm or refute the applicant's assumption that rerouting these emissions into the drum dryer will not cause an increase in the estimated TAPs emissions from the drum dryer stack.

DEQ estimated the increase in the total TAPs emissions associated with this PTC (shown in Appendix B) based on AP-42 Section 11.1 emission factors for silo filling, loadout, and from the drum dryer for an increased production rate of 50 tons per hour (the proposed 300 ton per hour rate minus the currently permitted 200 ton per hour rate, operating for only 12 hours each day). TAPs emissions that exceeded the screening emission level (EL) are shown in Table 5.2. As shown in the table, each of the TAPs that exceed the EL is a carcinogen. None of the estimated emissions of non-carcinogenic TAPs exceeded the applicable EL.

Table 5.2 PTC CHANGES TO EMISSION INVENTORY ESTIMATES – TOXIC AIR POLLUTANTS EXCEEDING SCREENING EMISSION LEVELS

Toxic Air Pollutant	Carcinogen?
Total Dioxins/Furans (TEQ)	Yes
Non-Polyaromatic Hydrocarbon (PAH) HAPs	
Acetaldehyde	Yes
Benzene	Yes
Formaldehyde	Yes
Polycyclic organic matter (POM)	Yes
Metals	
Arsenic	Yes
Cadmium	Yes
Hexavalent Chromium	Yes
Nickel	Yes

5.3 *Modeling*

DEQ reviewed the modeling analysis submitted by the facility and determined that it followed the DEQ Air Quality Modeling Guideline and demonstrated compliance with the applicable PM_{10} and TAPs regulatory limits to the department's satisfaction.

The application incorrectly states that the only increase in criteria pollutants is for PM_{10}. As shown in Table 5.1, lead emissions were estimated to increase by 0.0025 lb/hr (0.9 lbs per month) and 0.0004 tons per year. This increase is less than the 100 pounds per month or 0.6 tons per year that—based on DEQ Air Quality Modeling Guidance—would require modeling. Modeling of the increase in lead emissions was therefore not required.

As discussed in the modeling review memo contained in Appendix C, DEQ verification modeling results differ from the results presented in the application, but in all cases, used emission rates that were equal to or greater than the emissions that the applicant modeled.

The modeled concentrations, including the background, are less than the NAAQS. PM_{10} was not required to be analyzed because the emissions did not increase from this modification.

Table 5.3 AMBIENT POLLUTANT CONCENTRATIONS

Pollutant	Averaging Period	Modeled Ambient Concentration[a] ($\mu g/m^3$)[b]		Idaho Significant Contribution Level ($\mu g/m^3$)	Percent of SCL[c]	
		Applicant's Modeling	DEQ Verification Modeling		Applicant's Modeling	DEQ Verification Modeling
PM10	24-hour	4.91	4.9	5.0	98.2%	98%
	Annual	0.93	0.026	1.0	93%	2.6%

[a]Impact from facility-wide emissions
[b]Micrograms per cubic meter
[c]SCL = Significant Contribution Level

5.4 *Regulatory Review*

This section describes the regulatory analysis of the applicable air quality rules with respect to this PTC.

IDAPA 58.01.01.201 ..... Permit to Construct Required

Interstate Concrete and Asphalt Company requested an increase in their short-term production rate (hourly and daily production) that will cause an increase in air pollutant emissions.

IDAPA 58.01.01.725 ..... Rules for Sulfur Content of Fuels

This section applies to fuels used by the facility. The applicable sections are copied as Permit Conditions 3.6 and 3.7.

40 CFR 60 Subpart I ..... Standards of Performance for Hot Mix Asphalt Facilities

New Source Performance Standards (NSPS) apply to hot mix asphalt facilities that commenced construction or modification after June 11, 1973. DEQ requested the manufacture date for the drum dryer in a letter dated March 1, 2006. A statement that Subpart I applies to this facility is included on Page 4 of the permittee's March 23, 2006 application. The NSPS grain loading and opacity standards were included as permit conditions with compliance to be demonstrated by performance source tests.

40 CFR 60 Subpart OOO ..... Standards of Performance for Nonmetallic Mineral Processing Plants

Subpart OOO does not apply to the hot mix asphalt facility. This HMA facility is subject to Subpart I, and per Subpart OOO (b), Subpart OOO is not applicable to facilities that are subject to Subpart I.

40 CFR 279 ..... Standards for the Management of Used Oil
40 CFR 761 ..... Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions

The facility specifically requested to combust on-specification used oil, and the permit was written to allow its use. Resource Conservation and Recovery Act (RCRA) rules contained in 40 CFR 279.11 contain specifications for used oil which include maximum allowable levels for arsenic, cadmium, chromium, lead, the flash point, and total halogens. The maximum limit for total halogens is listed at 4,000 parts per million (ppm). However, used oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste under the rebuttable presumption provided under Section 279.10(b)(1). Such used oil is subject to 40 CFR 266, Subpart H, "Hazardous Waste Burned in Boilers and Industrial Furnaces" when burned for energy recovery unless the presumption of mixing can be

successfully rebutted. Therefore, the permit limits the total halogens to 1,000 ppm. This permit condition is consistent with previous permits issued for hot-mix asphalt plants[1].

Permit Condition 3.7 states that, in accordance with 40 CFR 279.11, with the exception of total halogens which are limited to 1,000 ppm, used oil burned for energy recovery shall not exceed any of the allowable levels listed in the table included with that permit condition. Those limits are shown in Table 5.10 below. In addition, used oil may not contain a quantifiable level of PCBs. The quantifiable level—also called the detection limit—is defined in 40 CFR 761.3 as meaning "2 micrograms per gram from any resolvable gas chromatographic peak, i.e., 2 ppm." The emissions inventory for burning used oils is based on EPA AP-42 emission factors for waste oil fuels, which reflect these limits on contaminants in used oils. These permit conditions are considered reasonable permit conditions because they inherently limit air pollution emissions.

TABLE 5.4 USED OIL SPECIFICATIONS[1]

Constituent/property	Allowable Level for On Specification Used Oil
Arsenic	5 ppm[2] maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Flash point	100°F minimum
Total halogens	1,000 ppm maximum
PCBs[3]	< 2 ppm

[1]The specification does not apply to mixtures of used oil and hazardous waste that continue to be regulated as hazardous waste (see 40 CFR 279.10(b)).
[2]Parts per million
[3]Applicable standards for the burning of used oil containing PCBs are imposed by 40 CFR 761.20(e)

DEQ's Waste Program has reviewed and approved the above discussions regarding regulating used oil.

IDAPA 58.01.01.210..... Demonstration of Preconstruction Compliance with Toxic Standards

There was no proposed increase in the annual HMA production, so this PTC does not result in any increase in the emissions of carcinogenic TAPs, which are based on an annual acceptable ambient concentration standard. Carcinogenic TAPs were therefore not analyzed.

The change in the facility's estimated toxics emissions from this PTC includes increased TAPs emissions due to increasing short-term HMA production. The increase in emission estimates for noncarcinogenic TAPs was based on the increase in the hourly HMA production from 200 to 300 tons per hour, operating for a maximum 12-hour day. The increase in noncarcinogenic TAPs emissions was predicted to be less than the corresponding screening emissions level increment in pounds per hour.

The comparison of the emission rates of the noncarcinogenic TAPs emissions against the screening ELs demonstrates to DEQ's satisfaction that the facility would be in compliance with toxic air pollutant increments listed IDAPA 58.01.01.585. In accordance with IDAPA 58.01.01.203.03, this also demonstrates preconstruction compliance with IDAPA 58.01.01.161.

5.5 Fee Review

Interstate Concrete and Asphalt Company paid the $1,000 application fee required by IDAPA 58.01.01.224 on February 7, 2006.

[1] PTC-030138 Interstate Concrete, Hayden Lake, 2/18/05 & PTC-040101 Interstate Concrete, Rathdrum, 2/18/05

A permit to construct processing fee of $1,000 is required in accordance with IDAPA 58.01.01.225 because the reduction in emissions of 22.3 tons per year due to changes in this PTC is less than an increase of one ton per year. Interstate Concrete and Asphalt Company paid the $1,000 processing fee on June 14, 2006.

Table 5.5 PTC PROCESSING FEE TABLE

Emissions Inventory			
Pollutant	**Annual Emissions Increase (T/yr)**	**Annual Emissions Reduction (T/yr)**	**Annual Emissions Change (T/yr)**
NO_X	0.0	4.55	-4.6
SO_2	0.0	2.1	-2.1
CO	0.0	18.9	-18.9
PM_{10}	3.5	0.0	3.5
VOC	0.0	0.28	-0.28
TAPS/HAPS	0.0	0.0	0.0
Total:		**25.83**	**-22.3**
Fee Due	**$1,000.00**		

5.6 *Regional Review of Draft Permit*

A draft permit and statement of basis was made available for review by the Coeur d'Alene Regional Office (CRO) on June 13, 2006. Comments were received on June 13, 2006. The comments were incorporated: some of the baghouse design parameters were deleted from Permit Condition 3.3.2, and the condition was revised to include only enforceable conditions; the modeling memo reference to Kootenai County was corrected to Bonner County.

5.7 *Facility Review of Draft Permit*

The facility did not request a draft permit for review.

6. PERMIT CONDITIONS

This section describes only those conditions that have been revised, modified, or deleted as a result of this permit action. All other permit conditions remain unchanged.

Permit Conditions 1.1 through 1.3

Permit Conditions 1.1 through 1.3 contain the Purpose of the Permit, describes permit(s) that are replaced by this permit, and includes a listing the regulated sources that has been updated to reflect the change in the HMA plant equipment.

Permit Condition 2.11

This condition duplicated the text in Permit General Provision 6. Permit condition 2.11 was deleted and the remaining conditions in Section 2 renumbered.

Permit Conditions 2.11 (formerly 2.12), 3.15, and 4.7

These conditions were updated to reflect the June 28, 2005 issue date for Permit No. T2-040102.

Permit Conditions 3.1 through 3.3

The description of the process, emissions control, and plant equipment was changed from a batch mix plant to a drum mix dryer plant and the permitted production capacity value was updated to 300 tons per hour. The detailed description in Condition 3.3.2 noting the type and number of bags in the baghouse, air-to-cloth ratio, and pressure drop were deleted—these parameters were not intended to be enforceable conditions—and replaced by the manufacturer guaranteed maximum grain loading, stack height, and stack diameter.

Permit Condition 3.4.2

PM and PM_{10} emission limits were updated to reflect the new totals predicted to be emitted from this facility after changes authorized in this PTC have been implemented.

Permit Condition 3.5

The following phrase was deleted from this permit condition: "Any used oil supplied to the drum dryer shall meet the specifications in 40 CFR 279.11, with the exception of total halogens, as provided in Permit Condition 3.9. Total halogens are limited to 1,000 ppm." This phrase duplicated a condition already imposed in Permit Condition 3.9

Permit Condition 3.9

This permit condition and Table 6.1 were updated to clarify that used oil specifications also include a limit on the concentration of polychlorinated biphenyls (PCBs).

Table 6.1 USED OIL SPECIFICATIONS[1]

Constituent/property	Allowable level
Arsenic	5 ppm[2] maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Flash point	100 deg. F minimum
Total halogens	1,000 ppm maximum
PCBs[3]	< 2 ppm

[1] The specification does not apply to mixtures of used oil and hazardous waste that continue to be regulated as hazardous waste (see 40 CFR 279.10(b)).
[2] Parts per million
[3] Applicable standards for burning of used oil containing PCBs are imposed by 40 CFR 761.20(e)

Permit Condition 3.10

The permitted HMA production levels have been updated to 300 tons per hour, and to 3,600 tons per day (based on a maximum 12-hour operating day). A condition was added to limit the fraction of recycled asphalt pavement (RAP) added to the design aggregate to no more than 50%.

Permit Condition 3.15

The requirement to monitor the type and amount of fuel used in the drum dryer was deleted. Emissions from the drum dryer were estimated based on "worst-case" emission factors for using any of the allowable fuels, so logging the type and amount of fuel used is not necessary. Emissions estimates were based on emission factors tied to HMA production, not to the amount of fuel used.

Permit Condition 4.4

This permit condition was clarified to show that PM includes condensibles in accordance with IDAPA 58.01.01.006.66. Also, the references to the tables that contain the particulate emissions limits were updated to the format of this permit.

Permit Condition 5.7

This permit condition was reworded for clarity. The wording carried through from the Tier II operating permit No. 017-00048, dated August 2, 1999, was:

"The permittee shall provide notice to the DEQ within 10 days of making the change, as described in Section 1.2 of this permit."

This was reworded to say:

"The permittee shall provide notice to the DEQ within 10 days of making any changes to the material drop point engineering enclosures listed in Permit Condition 4.2."

7. PUBLIC COMMENT

An opportunity for public comment period on the PTC application was provided from May 12 through June 12, 2006, in accordance with IDAPA 58.01.01.209.01.c. During this time there were no requests for a public comment period on DEQ's proposed action.

During the opportunity for public comment period, a member of the public submitted several questions about a different portable hot mix asphalt plant that is currently located near Sagle, Idaho. Although the questions were posed with regard to Inland Asphalt's portable HMA plant, Facility ID No. 777-00225, which is currently permitted under P-040105, DEQ determined that the Sagle plant is operated by the same parent company and that the questions could apply equally to the plant that is the subject of this PTC. The commenter's questions and DEQ's responses are summarized below. Copies of the electronic communications and supporting analyses are included in Appendix D.

1) Question: Do they (i.e., the HMA plant) have any type of air pollution control in operation?

   DEQ Response: The Sagle HMA plant and the HMA plant that is the subject of this PTC action both have baghouses to control particulate matter. Potential emissions of toxic air pollutants are controlled by limiting the daily and annual production of hot mix asphalt.

2) Question: From the research that I have done, hydrogen sulfide vapors are often released during asphalt production which are highly toxic.

   DEQ Response: The Idaho DEQ believes strongly in protecting human health and in recognizing and responding to your concerns about emissions from facilities in your community. EPA AP-42 factors do not currently include data for potential emissions of hydrogen sulfide from HMA plants. Using emission factors developed by the State of North Carolina, DEQ calculated the impact from a plant similar to the Sagle facility, but with a higher production rate, and found that the concentration of hydrogen sulfide that the public might be exposed to outside of the facility property boundary would be less than 1.0 percent of DEQ's state standard for hydrogen sulfide of 0.7 milligrams per cubic meter (mg/m3) averaged over a 24-hour period.

3) Question: I live within a mile of the asphalt plant located on Hwy 95, just south of Sandpoint. The odors from the plant are very strong.

   DEQ Response: Please keep in mind that petroleum type odors may result from asphalt constituents other than hydrogen sulfide. Hydrogen sulfide has a very distinct "rotten egg" odor...Interstate has

recently purchased a filter unit for the asphalt tank at the (Sagle) plant which should help control odors once it's installed.

4) Question: Fine particulates that can cause irritation to the nose, throat, and lungs are also released.

   DEQ Response: DEQ's analysis of emissions from the Sagle HMA plant and for the HMA plant that is the subject of this PTC action include comparison of the estimated emissions of PM_{10} to Idaho's significant contribution levels (emission levels that may prompt additional limits on the facility operations) and to National Ambient Air Quality Standards (NAAQS).

5) Question: Additionally, what type of solvents are they using to cut the asphalt?

   DEQ Response: In a May 24, 2006 telephone discussion between the Interstate/Inland plant manager, Mr. Corky Witherwax, and DEQ engineer Cheryl Robinson, Mr. Witherwax stated that Interstate/Inland do not use solvents to cut the asphalt. He said that they do use approximately 1/2 – gallon of diesel fuel to clean and lubricate the plant's drag chain at the end of each day (the chain is approximately 140 feet long).

6) Question: My concern is not only air quality, but the potential to contaminate local ground water and surrounding soil.

   DEQ Response: The scope of this air quality permit to construct is limited to potential impacts on ambient air quality.

8. RECOMMENDATION

Based on the review of the application materials, and all applicable state and federal regulations, staff recommends that DEQ issue final PTC/Tier II Operating Permit No. P-060113 to Interstate Concrete and Asphalt Company.

CR/bf Permit No. P-060113

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APPENDIX A

AIRS Information

P-060113

AIRS/AFS[a] FACILITY-WIDE CLASSIFICATION[b] DATA ENTRY FORM

Facility Name: Interstate Concrete and Asphalt Company
Facility Location: Sandpoint
AIRS Number: 017-00048

AIR PROGRAM POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	SM80	TITLE V	AREA CLASSIFICATION A-Attainment U-Unclassified N- Nonattainment
SO_2	B							U
NO_x	SM							U
CO	SM							U
PM_{10}	SM							N
PT (Particulate)	SM		SM					U
VOC	B							A
THAP (Total HAPs)	B							
			APPLICABLE SUBPART					
			I					

[a] Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

[b] AIRS/AFS Classification Codes:

A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For HAPs only, class "A" is applied to each pollutant which is at or above the 10 T/yr threshold, or each pollutant that is below the 10 T/yr threshold, but contributes to a plant total in excess of 25 T/yr of all HAPs.

SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.

B = Actual and potential emissions below all applicable major source thresholds.

C = Class is unknown.

ND = Major source thresholds are not defined (e.g., radionuclides).

APPENDIX B

Emissions Inventory

P-060113

Interstate Concrete and Asphalt Company
Sandpoint Asphalt Plant
Sandpoint, Idaho
3/13/2006

Counter Flow Drum Mix Asphalt Plant

Estimated Hours of Operation at Max (hrs/yr):	467		Total HMA:	140,000 Tons per year
Production Rate (Tons/hr HMA):	300		Baghouse Exhaust Flow:	42,410 acfm @275 F, 4% moisture
Modeled Concentration (µg/m³) @ 1 lb/hr:	3.87	1-hr		26,180 dscfm (adjusted from 2[illegible] F, 16% moisture)
	0.844	24-hr		
	0.00561	Annual		
	0.00[illegible]	Annual	for Formaldehyde only (modeled using effect from previous batch plant)	
Fuel Type:	Used Oil/Fuel Oil/Natural Gas			
Pollution Control Equipment:	Baghouse			
AP-42 Edition:	Mar-04			

Pollutant	Emission Factor (lb/ton)	Emission Factor Reference	Factor Type+	Emissions (lb/hr)	Emissions (T/yr)	Idaho EL (lb/hr)	Modeled 24-hour Concentration (µg/m3)	Modeled Annual Concentration (µg/m3)	Idaho AAC (µg/m3)	Idaho AAC/AACC (µg/m3)
NOx	[illegible]	AP-42, Table 11.1-7 (3/04)	[illegible]	[illegible]	[illegible]	-	-		-	-
CO	0.13	AP-42, Table 11.1-7 (3/04)	[illegible]	[illegible]	[illegible]	-	-		-	-
SO2	[illegible]	AP-42, Table 11.1-7 (3/04)	WO	[illegible]	[illegible]	-	-		-	-
VOC	[illegible]	AP-42, Table 11.1-8 (3/04)	[illegible]	[illegible]	[illegible]	-	-		-	-
PM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	-		-	-
PM-10	70% of PM based on ratio of AP-42 factors		[illegible]	[illegible]	[illegible]	-	-		-	-
Lead	[illegible]	AP-42, Table 11.1-[illegible] (3/04)	WO	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
2,3,7,8-TCDD (PCB see note below)	[illegible]	AP-42, Table 11.1-10 (3/04)	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]
Acetaldehyde	[illegible]	AP-42, Table 11.1-10 (3/04)	WO	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]
Acrolein	[illegible]	AP-42, Table 11.1-10 (3/04)	WO	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
Benzene	[illegible]	AP-42, Table 11.1-10 (3/04)	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]
Ethylbenzene	[illegible]	AP-42, Table 11.1-10 (3/04)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
Formaldehyde	[illegible]	AP-42, Table 11.1-10 (3/04)	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]
Hexane	[illegible]	AP-42, Table 11.1-10 (3/04)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
Isooctane (2,2,4-trimethylpentane)	[illegible]	AP-42, Table 11.1-10 (3/04)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
Methyl Ethyl Ketone	[illegible]	AP-42, Table 11.1-10 (3/04)	WO	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
Propionaldehyde	[illegible]	AP-42, Table 11.1-10 (3/04)	WO	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
Quinone	[illegible]	AP-42, Table 11.1-10 (3/04)	WO	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
Methyl Chloroform	[illegible]	AP-42, Table 11.1-10 (3/04)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
Toluene	[illegible]	AP-42, Table 11.1-10 (3/04)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
Xylene	[illegible]	AP-42, Table 11.1-10 (3/04)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
[illegible]	[illegible]	AP-42, Table 11.1-10 (3/04)	[illegible]	-	-	-	-		-	-
[illegible]**	[illegible]	AP-42, Table 11.1-10 (3/04)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
[illegible]	[illegible]	AP-42, Table 11.1-10 (3/04)	[illegible]	-	-	-	-		-	-
[illegible]	[illegible]	AP-42, Table 11.1-10 (3/04)	[illegible]	-	-	-	-		-	-
[illegible]	[illegible]	AP-42, Table 11.1-10 (3/04)	[illegible]	-	-	-	-		-	-
[illegible]	[illegible]	AP-42, Table 11.1-10 (3/04)	[illegible]	-	-	-	-		-	-
[illegible]	[illegible]	AP-42, Table 11.1-10 (3/04)	WO	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
[illegible]	[illegible]	[illegible]								

Facility: Interstate Concrete & Asphalt Company,

6/13/2008 8:02 **Permit/Facility ID:** P-060113 017-00048

CURRENT PTC ESTIMATES

TAPs EL Screen - ALL SOURCES

Only pollutants are shown in tested

Max Emissions of Any Pollutant from Drum Mix HMA Plant with Fabric Filter, Tank Heater, Generator, Lead-out/Silo/Asphalt Storage

A. Drum Mix Plant: 50 Tons/hour 497 Hours/year 140,000 Tons/year HMA throughput

Maximum emission for each pollutant from any fuel-burning option selected on "Facility Data" worksheet

B. Tank Heater: 0.0000 MMBtu Rated 0 Hours/year D. Include all emissions from Lead-out/Silo Filling? Yes

Maximum emission for each pollutant for heater burning any fuel selected on "Facility Data" worksheet

C. Generator: 0 gal/hour 0 Hours/year Small or Large Generator were Diesel Fuel

Pollutant	TOTAL of Max Emission Rates from A, B, C & D (lb/hr)	TAPs Screening Emission Limit (EL) Increment[b] (lb/hr)	TAPs Emissions Exceed EL Increment?	Modeled? Meets AAC or AACC?
HCl[c]	0.01	0.68	No	
Dioxins[d]		Toxic Equivalency Factor[d]	Adjusted Emission Rate (lb/hr)	
2,3,7,8-TCDD	1.05E-11	1.0	1.05E-11	
Total TCDD	4.88E-11	n/a		
1,2,3,7,8-PeCDD	1.58E-11	0.5	7.75E-12	
Total PeCDD	1.10E-09	n/a		
1,2,3,4,7,8-HxCDD	2.10E-11	0.1	2.10E-12	
1,2,3,6,7,8-HxCDD	9.50E-11	0.1	9.50E-12	
1,2,3,7,8,9-HxCDD	4.90E-11	0.1	4.90E-12	
Total HxCDD	8.00E-10	n/a		
1,2,3,4,6,7,8-Hp-CDD	2.40E-10	0.01	2.40E-12	
Total HpCDD	9.50E-10	n/a		
Octa CDD	1.23E-09	n/a		
Total PCDD[e]	3.96E-09	n/a		
Furans[d]				
2,3,7,8-TCDF	4.65E-11	0.1	4.65E-12	
Total TCDF	1.66E-10	n/a		
1,2,3,7,8-PeCDF	2.15E-10	0.05	1.08E-11	
2,3,4,7,8-PeCDF	1.20E-11	0.5	2.10E-11	
Total PeCDF	4.20E-09	n/a		
1,2,3,4,7,8-HxCDF	2.00E-10	0.1	2.00E-11	
1,2,3,6,7,8-HxCDF	6.00E-11	0.1	6.00E-12	
2,3,4,6,7,8-HxCDF	9.50E-11	0.1	9.50E-12	
1,2,3,7,8,9-HxCDF	4.20E-10	0.1	4.20E-11	
Total HxCDF	6.80E-10	n/a		
1,2,3,4,6,7,8-HpCDF	3.20E-10	0.01	3.20E-12	
1,2,3,4,7,8,9-HpCDF	1.30E-10	0.01	1.30E-12	
Total HpCDF	5.00E-10	n/a		
Octa CDF	2.40E-10	n/a		
Total PCDF[e]	2.00E-09	n/a		
Total PCDD/PCDF[e]	6.00E-09	n/a		
TOTAL Dioxin/Furans[d]	Adjusted lb/hr 1.83E-10	TAPs EL for 2,3,7,8 TCDD 1.00E-10	Exceeds TAPs EL? Exceeds	Modeled? Carcinogen
Non-PAH HAPs				
Acetaldehyde[f]	4.50E-02	3.00E-09	Exceeds	Carcinogen
Acrolein[f]	1.20E-02	0.017	No	
Benzene[f]	1.00E-02	8.00E-04	Exceeds	Carcinogen
1,3-Butadiene[f]				
Ethylbenzene[f]	1.38E-02	29	No	
Formaldehyde[f]	1.50E-01	5.10E-04	Exceeds	Carcinogen
Hexane[f]	4.90E-02	12	No	
Isooctane	2.01E-09			
Methyl Ethyl Ketone[f]	1.24E-02	39.3	No	
Pentane[f]	0.00E+00	118	No	
Propionaldehyde[f]	8.58E-03	9.9E07	No	
Quinone[f]	8.00E-03	0.027	No	
Methyl chloroform[f]	2.40E-03	127	No	
Toluene[f]	1.40E-01	25	No	
Xylene[f]	1.31E-02	29	No	
TOTAL PAH HAPs (lb/hr) =		8.49E-01		
TOTAL Federal HAPs (lb/hr) =		8.61E-01		
TOTAL Idaho TAPs (lb/hr) =		8.53E-01		

Pollutant	TOTAL of Max Emission Rates from A, B, C & D (lb/hr)	TAPs Screening Emission Limit (EL) Increment[b] (lb/hr)	TAPs Emissions Exceed EL Increment?	Modeled? Meets AAC or AACC?
PAH HAPs				
2-Methylnaphthalene	9.97E-05			
3-Methylchloranthrene[f]	0.00E+00	2.50E-09	No	
Acenaphthene	1.74E-04			
Acenaphthylene	1.11E-06			
Anthracene	1.03E-06			
Benzo(a)anthracene	2.88E-06			
Benzo(a)pyrene[f]	8.62E-07	2.00E-06	No	
Benzo(b)fluoranthene	6.38E-06			
Benzo(e)pyrene	6.04E-06			
Benzo(g,h,i)perylene	2.38E-06			
Benzo(k)fluoranthene	2.43E-06			
Chrysene	5.32E-06			
Dibenzo(a,h)anthracene	6.31E-06			
Dibenzofuran	8.00E-06			
Fluoranthene	5.81E-06			
Fluorene	8.09E-04			
Indeno(1,2,3-cd)pyrene	4.30E-07			
Naphthalene[f]	3.26E-06	3.33	No	
Perylene	6.00E-06			
Phenanthrene	1.58E-05			
Pyrene	2.31E-04			
Polycyclic Organic Matter[d,e]	6.42E-06	2.00E-06	Exceeds	Carcinogen
Non-HAP Organic Compounds				
Acetone[f]	4.19E-02	119	No	
Benzaldehyde	5.58E-03			
Butane	3.35E-03			
Butyraldehyde	8.00E-09			
Crotonaldehyde[f]	4.30E-03	0.39	No	
Ethane	3.58E-01			
Heptane	4.70E-01	106	No	
Hexanal	8.98E-09			
Isovaleraldehyde	1.00E-09			
2-Methyl-1-pentene	2.00E-07			
2-Methyl-2-butene	2.00E-09			
3-Methylpentane	8.95E-09			
1-Pentene	1.16E-01			
n-Pentane[f]	1.05E-02	118	No	
Valeraldehyde (n-Valeraldehyde[f])	3.36E-09	11.7	No	
Metals				
Antimony[f]	9.00E-09	0.033	No	
Arsenic[f]	2.98E-09	1.50E-06	Exceeds	Carcinogen
Barium[f]	2.98E-04	0.033	No	
Beryllium[f]	0.00E+00	2.80E-06	No	
Cadmium[f]	2.06E-06	3.70E-06	Exceeds	Carcinogen
Chromium[f]	2.73E-04	0.033	No	
Cobalt[f]	1.30E-08	0.0033	No	
Copper[f]	1.58E-04	0.013	No	
Hexavalent Chromium[f]	2.25E-08	5.60E-07	Exceeds	Carcinogen
Manganese[f]	3.98E-04	0.067	No	
Mercury[f]	1.99E-04	0.003	No	
Molybdenum[f]	0.00E+00	0.333	No	
Nickel[f]	3.18E-08	2.70E-06	Exceeds	Carcinogen
Phosphorus[f]	1.99E-09	0.067	No	
Silica[f]	2.00E-09	0.067	No	
Selenium[f]	1.79E-08	0.013	No	
Thallium[f]	2.08E-07	0.007	No	
Vanadium[f]	0.00E+00	0.003	No	
Zinc[f]	3.08E-09	0.067	No	

a) Reserved.

b) Toxic Air Pollutants, IDAPA 58.01.01.585 and .586, levels in effect as of January 27, 2008

c) Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-dioxins and Dibenzofurans (CDDs and CDFs, 1998 update, EPA/625/3-89/016, March 1989 (Source: Mike Dubois, IDEQ State Office, April 2008)

n/a = not available, IDAPA 58.01.01.585, TAPs Carcinogenic Increments: Total of adjusted emission rates are treated as a single TAP (2,3,7,8 TCDD)

d) IDAPA 58.01.01.585, Polycyclic Organic Matter: Emissions of PAHs shown in bold shall be considered together as one TAP equivalent in potency to benzo(a)pyrene.

e) IDAPA Toxic Air Pollutant, 58.01.01.585 or 586

Facility: Interstate Concrete & Asphalt Company,

6/13/2006 9:58 Permit/Facility ID: P-060113 017-00048

CURRENT PTC ESTIMATES

TAPs EL Screen - ALL SOURCES

Maximum Emissions of Any Pollutant from Drum Mix HMA Plant with Fabric Filter, Tank Heater, Generator, Load-out/Silo/Asphalt Storage

A. Drum Mix Plant: 60 Tons/hour 497 Hours/year 148,000 Tons/year HMA throughput

Maximum emission for each pollutant from any fuel-burning option selected in "Facility Data" worksheet.

B. Tank Heater: 0.0000 MMBtu Rated 0 Hours/year B. Include all emissions from Load-out/Silo/Storage? Yes

Maximum emission for each pollutant for heater burning any fuel selected in "Facility Data" worksheet.

C. Generator: 0 gal/hour 0 Hours/year Small or Large Generator using Diesel Fuel

Pollutant	TOTAL of Max Emission Rates from A, B, C & D (lb/hr)	TAPs Screening Emission Limit (EL) [a] (lb/hr)	TAPs Emissions Exceed EL Increment?	Modeled?
see PAH HAPs				
Bromomethane (Methyl bromide) [b]	3.00E-05	1.37	No	
2-Butanone (see Methyl Ethyl Ketone)				
Carbon disulfide [b]	8.00E-06	3	No	
Chloroethane (Ethyl chloride) [b]	8.70E-06	170	No	
Chloromethane (Methyl chloride) [b]	7.80E-06	9.887	No	
Cumene [b]	2.20E-06	18.9	No	
n-Hexane [b] (see Hexane [b])				
Methylene chloride (Dichloromethane) [b]	5.81E-07	1.00E-03	No	
MTBE	0.00E+00			
Styrene [b]	2.64E-06	8.67	No	
Tetrachloroethane (Tetrachloroethylene [b])	1.60E-06	1.30E-02	No	
1,1,1-Trichloroethane (see Methyl chloroform [b])				
Trichloroethene (Trichloroethylene [b])	0.00E+00	17.93	No	
Trichlorofluoromethane	2.70E-06			
m-/p-Xylene [b] (added into Xylene [b])				
o-Xylene [b] (added into Xylene [b])				
Phenol [b]	2.01E-04	1.27	No	
Non-HAP Organic Compounds				
Methane	6.70E-02			

a) For HMA facilities subject to NSPS (40 CFR 60, Subpart I), PTE includes fugitive emissions of PM from load-out, silo filling & storage tank operations.

b) OAPA Toxic Air Pollutant, 59.01.01.585 or .586

APPENDIX C

Modeling Review

P-060113

MEMORANDUM DRAFT

DATE: June 1, 2006

TO: Cheryl Robinson, Permit Writer, Air Program

FROM: Kevin Schilling, Stationary Source Modeling Coordinator, Air Program

PROJECT NUMBER: P-060113

SUBJECT: Modeling Review for the Interstate Concrete & Asphalt Company Permit to Construct Application for modifications to their Hot Mix Asphalt Plant in Sandpoint, Idaho.

1.0 Summary

Interstate Concrete & Asphalt Company (Interstate) submitted a Permit to Construct (PTC) application to modify their asphalt, concrete, and rock crushing facility located in Sandpoint, Idaho. The modification involves replacing their 200 ton per hour asphalt plant dryer with a 300 ton per hour drum mix dryer. Air quality analyses involving atmospheric dispersion modeling of emissions associated with the modification were submitted in support of a permit application to demonstrate that the facility would not cause or significantly contribute to a violation of any ambient air quality standard (IDAPA 58.01.01.203.02).

A technical review of the submitted air quality analyses was conduced by DEQ. The submitted modeling analyses in combination with DEQ's staff analyses: 1) utilized appropriate methods and models; 2) was conducted using reasonably accurate or conservative model parameters and input data; 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed either a) that predicted pollutant concentrations from emissions associated with the proposed facility were below significant contribution levels (SCLs); or b) that predicted pollutant concentrations from emissions associated with the facility, when appropriately combined with background concentrations, were below applicable air quality standards at all receptor locations. Table 1 presents key assumptions and results that should be considered in the development of the permit.

Table 1. KEY ASSUMPTIONS USED IN MODELING ANALYSES

Criteria/Assumption/Result	Explanation/Consideration
Maximum 24-hour PM_{10} impacts of the proposed modification are at 98 percent of the allowable impact.	Sandpoint, Idaho, is a PM_{10} non-attainment area. Impacts of all emissions increases were assessed, including fugitive emissions from vehicle traffic and material handling operations.
TAPs preconstruction compliance for formaldehyde was demonstrated using the net ambient concentration, per IDAPA 58.01.01.210.10	Emissions limits and other permit terms shall be included in the permit for formaldehyde to assure compliance.

2.0 Background Information

2.1 Applicable Air Quality Impact Limits and Modeling Requirements

This section identifies applicable ambient air quality limits and analyses used to demonstrate compliance.

2.1.1 Area Classification

The Interstate facility is located in Sandpoint, Idaho, within Bonner County. The area is designated as an attainment or unclassifiable area for sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), lead (Pb), and ozone (O_3). Sandpoint is a non-attainment area for particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM_{10}). There are no Class I areas within 10 kilometers of the facility.

2.1.2 Significant and Full Impact Analyses

If estimated maximum pollutant impacts to ambient air from the emissions sources associated with the HMA modification exceed the significant contribution levels (SCLs) of IDAPA 58.01.01.006.91, then a full impact analysis is necessary to demonstrate compliance with IDAPA 58.01.01.203.02. A full impact analysis for attainment area pollutants involves adding ambient impacts from facility-wide emissions to DEQ-approved background concentration values that are appropriate for the criteria pollutant/averaging-time at the facility location and the area of significant impact. The resulting maximum pollutant concentrations in ambient air are then compared to the National Ambient Air Quality Standards (NAAQS) listed in Table 2. Table 2 also lists SCLs and specifies the modeled value that must be used for comparison to the NAAQS.

PM_{10} impacts resulting from the proposed modification at a facility within a non-attainment area cannot exceed SCLs. Sandpoint, Idaho, is a PM_{10} non-attainment area.

2.2 Background Concentrations

Background concentrations were revised for all areas of Idaho by DEQ in March 2003[1]. Background concentrations in areas where no monitoring data are available were based on monitoring data from areas with similar population density, meteorology, and emissions sources.
Background concentrations used in these analyses are listed in Table 3. Small town / suburban default values were used for background concentrations. PM_{10} background concentrations were not used in the analyses because PM_{10} impacts in the non-attainment area are limited to the SCLs.

Table 2. APPLICABLE REGULATORY LIMITS

Pollutant	Averaging Period	Significant Contribution Levels[a] ($\mu g/m^3$)[b]	Regulatory Limit[c] ($\mu g/m^3$)	Modeled Value Used[d]
PM_{10}[e]	Annual	1.0	NA[f]	Maximum 1st highest
	24-hour	5.0	NA[f]	Maximum 1st highest
Carbon monoxide (CO)	8-hour	500	10,000[g]	Maximum 2nd highest[h]
	1-hour	2,000	40,000[g]	Maximum 2nd highest[h]
Sulfur Dioxide (SO_2)	Annual	1.0	80[i]	Maximum 1st highest[h]
	24-hour	5	365[g]	Maximum 2nd highest[h]
	3-hour	25	1,300[g]	Maximum 2nd highest[h]
Nitrogen Dioxide (NO_2)	Annual	1.0	100[i]	Maximum 1st highest[h]
Lead (Pb)	Quarterly	NA	1.5[j]	Maximum 1st highest[h]

1 Hardy, Rick and Schilling, Kevin. *Background Concentrations for Use in New Source Review Dispersion Modeling.* Memorandum to Mary Anderson, March 14, 2003.

[1]IDAPA 58.01.01.006.91
[2]Micrograms per cubic meter
[3]IDAPA 58.01.01.577 for criteria pollutants
[4]The maximum 1st highest modeled value is always used for significant impact analysis
[5]Particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers
[6]Sandpoint is a PM_{10} non-attainment area. Impacts from a proposed modification must remain below the significant contribution level.
[7]Not to be exceeded more than once per year
[8]Concentration at any modeled receptor
[9]Never expected to be exceeded in any calendar year
[10]Never expected to be exceeded more than once in any calendar year

Table 3. BACKGROUND CONCENTRATIONS

Pollutant	Averaging Period	Background Concentration ($\mu g/m^3$)[2]
Sulfur dioxide	3-hour	42
	24-hour	26
	annual	8
Carbon monoxide	1-hour	10,200
	8-hour	3,400
Nitrogen dioxide	annual	32

[2]Micrograms per cubic meter

3.0 Modeling Impact Assessment

3.1 Modeling Methodology

Table 4 provides a summary of the modeling parameters used in analyses submitted. Aspen Consulting & Engineering, Inc. (Aspen), Interstate's consultant, conducted the ambient impact analyses.

Table 4. MODELING PARAMETERS

Parameter	Description/Values	Documentation/Additional Description
Model	ISCST3	ISCST3 version 02035.
Meteorological data	2000	Meyer Ranch, Idaho, surface data Spokane, Washington upper air data
Terrain	Considered	Elevation data from digital elevation model (DEM) files
Building downwash	Considered	The building profile input program (BPIP) was used
Receptor grid	Grid 1	25-meter spacing along boundary
	Grid 2	50-meter spacing out to 1,000 meters
	Grid 3	100-meter spacing out to 5,000 meters
Facility location (UTM)[1]	Easting	532 kilometers
	Northing	5,348 kilometers

[1]Universal Transverse Mercator

3.1.1 Modeling protocol

A protocol was submitted to and approved by DEQ prior to submission of the application. Modeling was conducted using methods and data presented in the protocol and the *State of Idaho Air Quality Modeling Guideline*.

3.1.2 Model Selection

ISCST3 was used by Aspen to conduct the ambient air analyses. ISCST3 is appropriate for this facility since all ambient air locations are outside of building recirculation cavities. ISCST3 accounts for building downwash, but does not calculate concentrations for areas within recirculation cavities.

3.1.3 Meteorological Data

Site-specific meteorological data are available for Sandpoint, Idaho; however, these data have not been processed into a model-ready format. Surface meteorological data collected from April 2000 through March 2001 at Meyer Ranch, Idaho, were used for these analyses, combined with upper air data from Spokane, Washington.

PCRAMMET, the meteorological data preprocessor for ISCST-3, occasionally generates unrealistically low mixing heights as a result of interpolation algorithms used with the twice daily measured mixing heights. The modeling analyses were conducted using meteorological data corrected for low mixing heights. All mixing height values below 50 meters were replaced with a value of 50 meters.

3.1.4 Terrain Effects

The modeling analyses submitted considered elevated terrain, with elevations obtained from USGS digital elevation model (DEM) files. Elevations of terrain were not thoroughly reviewed by DEQ since review of a topographic map indicates the area is nearly flat for dispersion modeling purposes, especially considering that maximum impacts are located very near the emissions sources.

3.1.5 Facility Layout

DEQ verified proper identification of the facility boundary and buildings on the site by comparing the modeling input to a facility plot plan submitted with the application and aerial photographs of the area.

3.1.6 Building Downwash

Plume downwash effects caused by structures proposed for the facility were accounted for in the modeling analyses. The Building Profile Input Program (BPIP) was used to calculate direction-specific building dimensions and Good Engineering Practice (GEP) stack height information from building dimensions/configurations and emissions release parameters for ISCST3.

3.1.7 Ambient Air Boundary

The property boundary was used as the ambient air boundary for the modeling analyses submitted by Interstate. DEQ assumed reasonable measures would be taken to ensure the general public are excluded from access to the property.

3.1.8 Receptor Network

The receptor grids used by Aspen met the minimum recommendations specified in the *State of Idaho Air Quality Modeling Guideline*. DEQ determined the receptor grid was adequate to reasonably resolve maximum modeled concentrations.

3.1.9 Modeling Methods Used

The Sandpoint State Implementation Plan (SIP) requires the following of new sources:

> "In PM_{10} nonattainment areas, DEQ will consider PM_{10} emissions from all sources associated with the facility operations. This specifically includes all fugitive emission sources, such as material transfers, vehicle traffic and storage piles, in addition to the ducted sources of PM_{10}.

This practice will provide continued consistency in the evaluation of ambient impacts from industrial processes and on emission inventories and dispersion modeling analysis."

The dryer stack is the only TAP emissions point for TAPs requiring modeling analyses. A TAP dispersion factor was generated using a single analysis with a 1.0 pounds per hour (lb/hr) emissions rate for the annual averaging period for AACCs and the 24-hour averaging period for AACs. Design concentrations were calculated by multiplying the appropriate 1.0 lb/hr modeling result (the dispersion factor) by the TAP-specific pound per hour emissions rate. Compliance with the formaldehyde AACC was demonstrated using the Net Ambient Concentration as per IDAPA 58.01.01.210.10. This involved modeling emissions from the new dryer with negative emissions of the old asphalt plant dryer.

3.2 *Emission Rates*

Emissions rates used in the dispersion modeling analyses submitted by the applicant were reviewed against those in the permit application, the engineering technical memorandum, and the proposed permit. The following approach was used for DEQ verification modeling:

- All modeled emissions rates were equal to or greater than the facility's emissions calculated in the PTC application or the permitted allowable rate.
- More extensive review of modeling parameters selected was conducted when model results for specific sources approached applicable thresholds.

The modeling of fugitive emissions from aggregate handling are a function of wind speed. The modeling conducted by Aspen used emissions from aggregate handling at a wind speed of 8.3 miles per hour (3.7 meters per second). DEQ verification modeling used six emissions rates calculated at different wind speeds, then used an option within ISCST3 to vary emissions by wind speed. The base emissions of 0.0286 lb/hr calculated at 8.3 miles per hour was left unchanged, but adjustment factors were used as a function of wind speed for each hour modeled. ISCST3 uses default wind speed categories with upper wind speeds in each category of 1.54 meters per second (m/sec), 3.09 m/sec, 5.14 m/sec, 8.23 m/sec, and 10.8 m/sec. The sixth wind speed category does not have an upper bound. Emissions were calculated for each category using the midpoint of the wind speed. For Category 1, a lower bound of 0.0 m/sec was used, and for category 6 an upper bound of 14 m/sec was used. Table 5 shows the emissions for each wind speed category.

Table 5. PM_{10} EMISSIONS FROM MATERIAL HANDLING ACTIVITIES AS A FUNCTION OF WIND SPEED

Wind Speed Category	Midpoint Wind Speed for Category[a] (m/sec[b] (mph[c]))	PM_{10} Emissions Rate for Category (lb/hr[d])	Emissions Adjustment Factor[e]
1	0.77 (1.72)	0.00369	0.129
2	2.32 (5.18)	0.0155	0.541
3	4.12 (9.20)	0.0326	1.141
4	6.69 (14.95)	0.0613	2.145
5	9.52 (21.28)	0.0971	3.394
6	12.4 (27.74)	0.137	4.791

[a]Default windspeed categories used by ISCST3
[b]Meters per second
[c]Miles per hour
[d]Pounds per hour
[e]Factor used for ISCST3 input file to adjust base emissions rate of 0.0286 lb/hr

Table 6 list criteria emissions rates for sources included in the short-term dispersion modeling analyses. Aspen did not perform modeling for sulfur dioxide, carbon monoxide, and oxides of nitrogen because there was a net reduction in emission quantities. DEQ included these pollutants in verification modeling

because stack parameters associated with the new dryer are different than those of the existing dryer. Changes in stack parameters can substantially affect the dispersion of pollutants emitted.

Aspen included fugitive PM_{10} emissions from material handling operations (aggregate and product loadout). Aspen conservatively modeled annual impacts using the short-term emission increases, even though Interstate indicated annual production would remain unchanged at 140,000 ton/yr of asphalt. DEQ conducted verification analyses using annual emissions rates for the new dryer and negative emissions for the existing dryer. Fugitive emissions from material handling were not included in modeling of annual impacts since the annual production will not change. Table 7 provides long-term emissions used for DEQ's verification analyses.

Table 6. MODELED EMISSIONS RATES FOR SHORT-TERM AVERAGING PERIODS

Source Id	Description	Emission Rates (lb/hr)[a]			
		PM_{10}[b]	SO_2[c]	CO[d]	NOx[e]
DRYER	New Asphalt Plant Dryer	6.28	(17.4)	(39)	(16.5)
OLD_DRY	Existing Dryer	-2.3	(-17.6)	(-80)	(-24)
Fugitive Emissions Sources					
PVD1	Paved Road Segment 1	0.0059	0.0	0.0	0.0
PVD2	Paved Road Segment 2	0.0113	0.0	0.0	0.0
GRVL1	Gravel Road Segment 1	0.0034	0.0	0.0	0.0
GRVL2	Gravel Road Segment 2	0.0023	0.0	0.0	0.0
GRVL3	Gravel Road Segment 3	0.0011	0.0	0.0	0.0
LOADER	Loader Dump to Cold Feed Bins	0.029	0.0	0.0	0.0
PRODLOAD	Product Loading	0.0119	0.0	0.0	0.0

[a]Pounds per hour emissions rates. Values in parentheses are those from DEQ's verification analyses, where those values differ from what was used in the submitted analyses
[b]Particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers
[c]Sulfur dioxide
[d]Carbon monoxide
[e]Oxides of nitrogen

Table 7. MODELED EMISSIONS RATES FOR LONG-TERM AVERAGING PERIODS

Source Id	Description	Emission Rates (lb/hr)[a]		
		PM_{10}[b]	SO_2[c]	NOx[d]
DRYER	New Asphalt Plant Dryer	6.28 (0.335)	(0.927)	(0.879)
OLD_DRY	Existing Dryer	-2.3 (-0.184)	(-1.41)	(-1.92)

[a]Pounds per hour emissions rates. Values in parentheses are those from DEQ's verification analyses, where those values differ from what was used in the submitted analyses
[b]Particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers
[c]Sulfur dioxide
[d]Oxides of nitrogen

Table 8 lists applicable TAP emissions increases associated with the HMA for those TAPs with an increase exceeding the EL. The Net Ambient Concentration was used to demonstrate compliance for formaldehyde, as described in Section 3.1.9. The net effect of the 0.93 lb/hr formaldehyde emissions increase from the new dryer and the 0.148 lb/hr emissions decrease from the old dryer was modeled.

Table 8. TAP Emissions Rates used in Modeling		
TAP	TAP Emissions Rates (lb/hr[a]) DRYER	EL (lb/hr)
2,3,7,8 – TCDD	9.26E-10	1.50E-10
Acetaldehyde	0.39	0.0030
Arsenic	1.68E-4	1.50E-6
Benzene	0.117	0.0008
POM[c]	2E-4	2.00E-6
Cadmium	1.23E-4	3.70E-6
Chromium	1.65E-3	5.60E-7
Formaldehyde[d]	0.93	0.00051
HCl	0.063	0.05
Chromium 6+	1.35E-4	5.60E-7
Nickel	1.89E-2	2.70E-5
Phosphorus	8.40E-3	7.00E-3
Propionaldehyde	0.039	0.0287
Quinone	0.0480	0.027

[a]pounds per hour
[b]Emissions screening level
[c]Polycyclic organic matter
[d]Emissions from the dryer were modeled with negative emissions from the old asphalt dryer of 0.148 lb/hr to generate a net ambient impact

3.3 *Emission Release Parameters*

Table 9 provides emissions release parameters, including stack height, stack diameter, exhaust temperature, and exhaust velocity. Most values used in the analyses appeared reasonable and within expected ranges, and additional documentation /verification of these parameters were not required.

Initial horizontal and vertical dispersion coefficients for volume sources appeared to be excessively large. Review of the information submitted indicated the physical dimension of the source was entered rather than the initial dispersion coefficient, which is a fraction of the physical dimension. DEQ calculated the initial coefficients by dividing the physical dimensions by 4.3, as per ISCST3 guidance materials.

Table 9. EMISSIONS AND STACK PARAMETERS					
Release Point /Location	Source Type	Stack Height (m)[a]	Modeled Diameter (m)	Stack Gas Temp. (K)[b]	Stack Gas Flow Velocity (m/sec)[c]
DRYER	Point	18.3	1.0	411	27.6
OLD_DRY	Point	11.0	1.0	408	18.7
Area Sources					
Release Point /Location	Source Type	Easterly Length (m)	Northerly Length (m)	Initial Vertical Dispersion Coefficient σ_{z0} (m)	
PVD1	Point	7	55	2.5	
PVD2	Point	7	85	2.5	
GRVL1	Point	7	30	2.5	
GRVL2	Point	17	7	2.5	
GRVL3	Point	7	10	2.5	
Volume Sources					
Release Point /Location	Source Type	Release Height (m)	Initial Horizontal Dispersion Coefficient σ_{y0} (m)	Initial Vertical Dispersion Coefficient σ_{z0} (m)	
LOADER	Volume	4	10 (2.33)	10 (2.33)	
PRODLOAD	Volume	4	5 (1.16)	15 (3.5)	

[b]Meters
[c]Kelvin
[d]Meters per second

3.4 Results for Significant Impact Analyses and Full Impact Analyses

Apsen demonstrated compliance with NAAQS for Interstate using significant impact analyses for PM_{10}. Results of the PM_{10} significant impact analyses are presented in Table 10. Differences between the results submitted by Aspen and Interstate and those obtained by DEQ verification analyses occur because of the following:

- DEQ verification analyses accounted for emissions rate variability, as a function of wind speeds, for material handling emissions associated with the loader. A single emissions rate, based on one wind speed, was used to generate the submitted results.
- DEQ verification analyses were conducted using smaller initial dispersion coefficients.

Aspen did not model other criteria pollutants as explained in Section 3.2. DEQ included these pollutants in verification analyses to assure compliance. DEQ conservatively used the maximum modeled concentration for all averaging periods in the full impact analyses.

Table 10. RESULTS OF FULL IMPACT ANALYSES

Pollutant	Averaging Period	Maximum Modeled Concentration[a] ($\mu g/m^3$)[b]	Significant Contribution Level ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	NAAQS[c] ($\mu g/m^3$)
PM_{10}[d]	24-hour	4.91 (4.9)	5.0	NA[e]	NA[e]	
	Annual	0.93 (0.026)	1.0	NA[e]	NA[e]	
Sulfur dioxide (SO_2)	3-hour	(34)	25	42	(76)	1,300
	24-hour	(6.1)	5.0	26	(32)	365
	Annual	(0.029)	1.0	NA[e]	NA[e]	
Carbon monoxide (CO)	1-hour	(135)	500	NA[e]	NA[e]	
	8-hour	(29)	2,000	NA[e]	NA[e]	
Nitrogen dioxide (NO_2)	Annual	(0.0062)	1.0	NA[e]	NA[e]	

[a]Values in parentheses are those obtained from DEQ verification modeling
[b]Micrograms per cubic meter
[c]National ambient air quality standards
[d]Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
[e]A full impact analysis was not required because impacts were below the SCLs

3.5 Results for TAPs Analyses

Compliance with TAP increments were demonstrated by modeling uncontrolled TAP emissions (those TAPs with emissions exceeding the ELs) from the dryer. Table 11 summarizes the ambient TAP analyses. Aspen incorrectly calculated 24-hour averaged concentrations, rather than annual averages, for the following AACCs: arsenic, POM, chromium 6+, and nickel. The AACCs were also incorrectly listed for these compounds. DEQ recalculated the concentrations from the annual dispersion factor, generated by modeling the dryer with a 1.0 lb/hr emissions rate.

Table 11. RESULTS OF TAP ANALYSES				
TAP	Averaging Period	Maximum Modeled Concentration[a] (µg/m³)[b]	AACC / AAC (µg/m³)	Percent of AACC / AAC
2,3,7,8 – TCDD	Annual	8.85E-11	2.2E-8	0.4
Acetaldehyde	Annual	3.73E-2	4.5E-1	8
Arsenic	24-hour (Annual)	1.1E-4 (1.61E-5)	0.23 (2.3E-4)	7
Benzene	Annual	1.12E-2	1.2E-1	9
POM	24-hour (Annual)	1.06E-4 (1.91E-5)	3.0E-4	6
Cadmium	24-hour (Annual)	8E-5 (1.18E-5)	0.56 (5.6E-4)	2
Formaldehyde	Annual	7.66E-2	7.7E-2	99
Chromium 6+	24-hour (Annual)	9E-5 (1.29E-5)	0.083 (8.3E-5)	16
Nickel	24-hour (Annual)	0.0122 (1.81E-3)	4.2 (4.2E-3)	43
Chromium 3+	24-hour	1.1E-3 (1.06E-3)	0.083 (25)	0.004
HCl	24-hour	4.06E-2	375	0.011
Phosphorus	24-hour	5.41E-3	5	0.11
Propionaldehyde	24-hour	2.51E-2	21.5	0.12
Quinone	24-hour	3.09E-2	20	0.15

[a]Values in parentheses are modeling results obtained by DEQ verification analyses, where results were different from submitted results

[b]Micrograms per cubic meter

4.0 Conclusions

The ambient air impact analysis submitted, in combination with DEQ's verification analyses, demonstrated to DEQ's satisfaction that emissions from the facility will not cause or significantly contribute to a violation of any air quality standard.

APPENDIX D

Responses to Public Comments

P-060113

Cheryl Robinson

From: Joan Lechtenberg
Sent: Thursday, May 18, 2006 1:47 PM
To: William Rogers; Cheryl Robinson
Subject: FW: Public Comment

I have to assume this questions concerns Interstate Asphalt Company, Sandpoint as 1.they are the only public comment opportunity in Sandpoint that is open at the moment and 2. It is a portable hot-mix Asphalt plant.

Anyway, Bill this ones yours.

Thank you,

Joan

-----Original Message-----
From: Joan Lechtenberg
Sent: Thursday, May 18, 2006 1:37 PM
To: 'PublicComment@deq.idaho.gov'
Subject: RE: Public Comment

Gail,

Thank you for contacting us. As your questions are of a technical nature, and not regarding the actual public comment process, I have passed them to our permit coordinator who is responsible for this project. He will reply to you directly.

Sincerely,

Joan Lechtenberg
Air Division
Department of Environmental Quality

-----Original Message-----
From: PublicComment@deq.idaho.gov [mailto:PublicComment@deq.idaho.gov]
Sent: Thursday, May 18, 2006 1:29 PM
To: Joan Lechtenberg; Nate Owen
Subject: Public Comment

You have received a public comment on:
DEQ receives complete air quality permit application for portable asphalt drum mix plant in Sandpoint
http://www.deq.idaho.gov/Applications/NewsApp/shownews.cfm?event_id=1507

Name: Gail Bolin
Email Address: wgbolin@hotmail.com
Affiliation: local resident
Comments: I live within a mile of the asphalt plant located on Hwy 95, just south of Sandpoint. The odors from the plant are very strong.

Do they have any type of air pollution control in operation? From the research that I have done hydrogen sulfide vapors are often released during asphalt production which are highly toxic. Fine particulates that can cause irritation to the nose, throat, and lungs are also released.

Additionally, what type of solvents are they using to cut the asphalt?

My concern is not only air quality, but the potential to contaminate local ground water and surrounding soil.

Thanks,

Gail Bolin
Sagle, Idaho

Cheryl Robinson

From: Mike Dubois

Sent: Thursday, May 25, 2006 5:07 PM

To: 'Gail Bolin'

Cc: Joseph Brown; Daniel Redline; Robert Wilkosz; Cheryl Robinson; Joan Lechtenberg; Mark Boyle; William Rogers

Subject: Interstate Sagle Plant Emissions

Dear Ms. Bolin,

The Idaho DEQ believes strongly in protecting human health and in recognizing and responding to your concerns about emissions from facilities in your community. Please be aware that the Environmental Protection Agency publishes data (see link below) on the types and amounts of pollutants expected from hot mix asphalt plants for DEQ engineers to use in predicting the impacts of facilities as part of the application process.

http://www.epa.gov/ttn/chief/ap42/ch11/final/c11s01.pdf.

Currently the above referenced EPA document does not provide data for potential emissions of hydrogen sulfide from hot mix asphalt plants. This is why it was not included in the 2004 permit you referenced. The emission data from EPA for hot mix plants is, however, quite extensive and I believe that the reason it does not include hydrogen sulfide is because the EPA does not feel it is typically emitted in dangerous quantities. Both a DEQ engineer and I have researched other available data on hydrogen sulfide emissions from hot mix asphalt plants and, in particular, a study conducted by the North Carolina Department of Air Quality (see link below).

http://daq.state.nc.us/toxics/studies/H2S/Asphalt_Modeling.pdf.

This study indicated that the emissions of hydrogen sulfide from these types of plants are negligible. A DEQ engineer calculated the impact from a plant similar to the Sagle facility with a high production rate using the data from the North Carolina study and found that the concentration of hydrogen sulfide that the public would be exposed to outside the facility property boundary would be less than 1.0% of DEQ's state standard of 0.7 milligrams per cubic meter (mg/m3) averaged over a 24 hour period.

During the permitting process an evaluation of criteria (NAAQS) and toxic air pollutants (TAPs) is conducted to see if a proposed plant's emissions meet our state standards. If they do not then limitations in the operation or construction of the plant will be required to meet DEQ's regulations before the permit is issued. An existing plant will have been subject to a NAAQS and TAPs analysis as part of the application process. In addition, there are often testing requirements in these permits to demonstrate compliance with the permit limits. As I mentioned previously, DEQ engineers need reliable and verifiable data to predict air quality impacts from new facilities. If that data does not exist or is incomplete in some way then it becomes difficult for DEQ to reasonably require a permit limitation based on information that is not scientifically supportable.

Please keep in mind that petroleum type odors may result from asphalt constituents other than hydrogen sulfide. Hydrogen sulfide has a very distinct "rotten egg" odor. A representative of Interstate Concrete has assured the DEQ engineer that they do not use solvents to cut asphalt but they do use approximately 1/2 gallon of diesel fuel to lubricate the plant's drag chain at end of each day (approximately 140 feet long). Additionally, Interstate has recently purchased a filter unit for the asphalt tank at the plant which should help to control odors once it's installed.

6/12/2006

I hope this has addressed your concerns. If you would like more information or would like to discuss this issue in more depth please contact me at the number below or send me an e-mail. Thank you.

Michael DuBois
Air Quality Analyst
Idaho DEQ
1410 N. Hilton
Boise, ID 83607

Office 208-373-0219
Fax 208-373-0154

mike.dubois@deq.idaho.gov

-----Original Message-----
From: Gail Bolin [mailto:wgbolin@hotmail.com]
Sent: Tuesday, May 23, 2006 12:55 AM
To: Mike Dubois
Subject: Asphalt plant

Mike,

My name is Gail Bolin and I'm writing to you regarding the asphalt plant located in the Linscott pit at 8910 Hwy 95 in Sagle, ID. I made an inquiry to the DEQ office with regards to air pollution (mainly hydrogen sulfide gas) and I received a reply from Joe Brown in the Coeur d'Alene office. He informed me that the plant is currently operating under a permit issued by DEQ on June 28, 2004; furthermore, he said "a TAP analysis was conducted, but hydrogen sulfide does not appear to be included in this analysis." He was not sure why and he suggested that I contact you for an answer.

I live within a mile of the asphalt plant, and I have just recently noticed strong odors coming from the area of the plant. I am concerned about the possibility of air pollution and I would like to know if they are in compliance with the National Ambient Air Quality Standards (NAAQS) and the Toxic Air Pollutant's (TAP's).

Sincerely,

Gail Bolin

MEMORANDUM

Date: May 19, 2006

To: Michael DuBois, Air Toxics Analyst, AQ Division

From: Cheryl A. Robinson, P.E., Permit Writer, AQ Division

Cc: Regional Permit Coordinators, AQ Division: Bill Rogers, Dan Pitman
Coeur d'Alene Regional Office: Dan Redline, Joe Brown, Mark Boyle

Subject: Estimated Ambient Air Quality Impacts from Hydrogen Sulfide (H_2S) Emissions from Hot Mix Asphalt Plants – Input for Air Toxics Evaluation

1) AP-42 Section 11.1, "Hot Mix Asphalt Plants," version dated April 2004, does not include emission factors for H2S emissions from hot mix asphalt (HMA) plants. [1]

2) The following emission factors for H_2S emissions from an HMA plant were developed by North Carolina's Division of Air Quality[2]:

TABLE 1. EMISSION FACTORS FOR HMA PLANT H_2S EMISSIONS

Hot-Mix Plant (APAC Plant)	Annual Throughput (tons)	Emission Factor (lb/hr)	Emission Factor (lb/ton)	Total Emissions (lb/yr)
Tank Filling	4,340	0.01	0.0002	0.9
Dryer-Mixer	101,000	0.7	0.0050	505

As shown in Table 1, emissions from tank filling are negligible compared to the emissions from the dryer-mixer. NC DAQ concluded in the referenced report that with the dispersion characteristics of the dryer-mixer stack, HMA plants are expected to cause "minimal public exposure to H_2S."

3) In April of 2005, NC DAQ lowered their acceptable ambient level (AAL) for H_2S from 2.1 to 0.12 milligrams per cubic meter (mg/m^3).[3] Idaho's acceptable ambient concentration (AAC) increment for H_2S is 0.7 mg/m^3.

4) The ambient impact from HMA dryer-mixer H_2S emissions is shown in Table 2 for an HMA drum dryer mix plant that was recently permitted in Idaho[4], which has dispersion characteristics that are not atypical, but which also has a relatively high hourly throughput compared to typical plants.

TABLE 2. ESTIMATED AMBIENT IMPACTS FROM HMA PLANT DRYER EMISSIONS OF H_2S

Max. Throughput (tons of HMA per hour)	Emission Factor (lb H_2S per Ton of HMA)	Max. Emission Rate (lb H_2S per hour)	SCREEN3 Dispersion Coefficient ($\mu g/m^3$ per lb/hr)	Averaging Period	Persistence Factor, Simple Terrain (unitless)	Maximum Predicted Ambient Impact (mg/m^3, 24-hr average)	IDAPA AAC (mg/m^3, 24-hr average)	Percent of IDAPA AAC	Percent of NC DAQ AAL
550	0.0050	2.75	3.942	24 hours	0.4	0.004	0.7	0.62%	3.6%

[1] April 2004, U.S. EPA, Compilation of Air Pollutant Emission Factors, accessible at http://www.epa.gov/ttn/chief/ap42/ch11/final/c11s01.pdf
[2] May 22, 2003, North Carolina Department of Environment and Natural Resources, Division of Air Quality, Toxics Protection Branch, "Investigation of Asphalt Terminal Modeling Scenarios," Investigation #03008, accessible at http://daq.state.nc.us/toxics/studies/H2S/Asphalt_Modeling.pdf
[3] NC DAQ H2S rulemaking documents, accessible at http://daq.state.nc.us/toxics/studies/H2S/
[4] Idaho DEQ, Facility ID No. 777-00084, PTC P-050215, Poe Asphalt Paving, Inc, issued April 21, 2006.